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ABSTRACT

Findings from a study that examined the effects of school-based management on the perceived environmental uncertainty of Texas elementary school teachers are presented in this paper. Perceived environmental uncertainty is defined as a lack of clarity and significant information in the school setting. Questionnaires were administered to teachers in two elementary schools with high proportions of minority students: 32 urban school teachers in a school participating in school-based management (SBM) and 30 teachers in a non-SBM school. The SBM school was located in the inner city and was 99% Hispanic; the non-SBM had a 85% minority enrollment. Findings indicate that the SBM school exhibited lower degrees of uncertainty at both in-district and out-of-district levels than did the non-SBM school. Despite different concerns expressed by each group, both were unclear about the availability of district support services and the impact of state legislation on the job. A conclusion is that school-based management is a viable strategy for reducing and coping with environmental uncertainty. Four tables are included. (20 references) (LMI)

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Levels of Environmental Uncertainty of a Site Based Management School within a Minority/Majority Context

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Introduction

As new expectations emerge for educational institutions and school administrators, the thrust of school based management is on establishing alternative structures for schools to assume responsibilities to provide quality schooling for all children. Thus, the call is for the empowerment of school administrators, teachers, staff and parents. This context influences perceptions of uncertainty of those involved, specially teachers, in the process of adopting a "site based management" approach in general and more particularly in a situation in which minority populations are becoming the majority of the student body.

Consequently, those schools adopting a decentralized approach to school management for the purpose of making decisions closest to the client are faced with the additional challenge of a changing population which does not reflect the old mold. As the College Board and the Western Interstate Commission for Higher Education predicts, Mitgang (1991) indicates, a third of US students will be from minority groups by 1995, and such students will make up a majority of high school graduates in four states. Additionally, Mitgang notes that non-whites and Hispanics already made up a majority of high school graduates in Hawaii, New Mexico and the District of Columbia in 1989. By 1994, California and Mississippi will join that group.

Other states, including Texas, are experiencing intriguing demographic trends. For instance, it is reported by García (1991) that minorities are now majority in Texas public schools. García explains that according to the Texas Education Agency enrollment report,

from Fall 1989 to Fall 1990, state-wide enrollment increased by 62,616 students- and almost 70 percent of the population increase were Hispanic. Furthermore, the lower the grade, the more Hispanics. The largest increases were reported in pre-kindergarten and kindergarten classes.

Under this perspective, the identification of environmental uncertainty levels seems to be a felt need. School administrators as well as teachers and staff of site based management schools must have a clear and meaningful understanding of the internal and external expectations associated with their jobs as well as with their minority-majority situation. Having an understanding of the environmental uncertainty levels, which is a key factor of communication and shared decision making, will enable administrators to influence communication structures.

Therefore, it is relevant that the relationship between environment and clarity/significance of communication be examined (Singh, 1991). Environmental uncertainty refers to the lack of clarity of information of one's job. According to Singh, environmental uncertainty is the "degree to which school personnel feel that their environment is composed of elements that are both unclear and significant to them, there is a perceived discrepancy between information possessed and information needed or desired" (1991).

Environmental uncertainty levels may vary depending on the location of the source. Sources of environmental uncertainty can be found outside of the school building itself but within the district, and outside of the building and outside of the district. Thus perceptions of environmental uncertainty may be different not only because of

the source but also because of the position of an individual. For instance, Ogawa (1984) reports that teachers work in isolation and that they not only appreciate but also expect the boundaries that separate them from outsiders. Furthermore, it was suggested that teachers perceive walls to be beneficial because they protect and enhance the course of instructions. Ogawa also found that "teachers attach great meaning to the boundaries which separate their classrooms from the rest of the school and the community." (1984, p. 15). Others assert that perhaps teachers have been buffered from uncertainty by the administration (Thompson, 1967).

Statement of the problem

The purpose of this study was to examine the effects of site-based management on the perceived environmental uncertainty of a selected sample of elementary school teachers. Site based management was viewed as the management strategy and structure that enables teachers to participate in decision making. Perceived environmental uncertainty was in turn defined as the lack of clarity of significant information and knowledge desired or needed to perform in the work environment.

Review of Literature

The call for alternative structures that can guarantee quality learning for all children, has produced a management strategy which has become, according to some, a promising approach. This approach is known as School or Site Based Management (SBM). According to the AASA/NAESP/NASSP (1988) School Based Management Task Force, SBM offers realistic hope of improved student and teacher performance.

Site based management has evolved to be a process which involves the individuals responsible for implementing decisions in actually making those decisions (AASA, NAESP, NASSP, 1988). Consequently, decisions are made at those levels closest to the issue or problem at hand which requires high levels of participation of those directly affected. The approach then "is based on two fundamental assumptions: 1) Those most closely affected by decisions ought to play a significant role in making those decisions, and 2) Educational reform efforts will be most effective and long-lasting when carried out by people who feel a sense of ownership and responsibility for the process." (AASA, NAESP, NASSP, 1988).

Some related studies on educational effectiveness contribute to the understanding of how participatory management can impact school quality. For instance, Greenblatt, Cooper and Muth (1984) have reported that schools in which the principal practiced consultative management style through seeking the opinions of selected members of the staff also had the most effective learning environments.

There are several essential components associated with SBM. Empowerment, professionalization of teachers and communication are the most commonly identified. Teachers are "empowered through shared decision making and they are also enabled because the decisions are more likely to support what they are trying to accomplish in the classroom" (AASA, NAESP, NASSP,1984). The key to full empowerment is that teachers feel the important aspects of their work are in their own professional hands (Keith and Girling, 1991). Professionalism, the second key component, implies that

teachers are considered professionals since they have the same basic characteristics as other identified professionals. These are: "1) application of skills based on technical knowledge, 2) advanced educational and training requirements, 3) some formal controls on entry to the profession, 4) existence of professional associations , 5) codes of professional conduct, and 6) a sense of responsibility for serving the public" (Benveniste, 1987).

Others also refer to the need to recognize that administrators are working with professionals and that organizational success depends on cooperation and exchange of information with these professionals (Conley and Bacharach, 1990). In addition, it is appropriate to consider that the "managerial strategies of administrators stem from their beliefs regarding the control of uncertainty. Given that an organization's success depends on its ability to cope with and process uncertainty (March and Simon,1958; Perrow, 1961; Thompson, 1967; Hall, 1967), it is suggested that administrators must determine the extent to which teachers control this process. This, Bacharach and Conley (1989) suggest, is particularly important in organizations in which the primary line employees are professionals- that is, individuals who are trained to cope with uncertainty. Therefore, "administrators will be willing to establish a participatory management strategy only when they believe that their subordinates are "line" professionals who can successfully deal with uncertainty" (Bacharach and Conley, 1990).

School based management relies on face-to-face communication which tends to increase in both quantity and quality. Because principals, teachers, parents, students and community members

participate in significant decisions about schools, a systematic process of communication must be a high priority if SBM schools are to be effective.

In a two-way communication O'Reilly and Pondy (1979) indicate that "the meaning of a message depends on both the content itself and the organizational context". Others argue that the environment surrounding the communication process plays a significant role. Hoy and Miskel (1987) for instance, suggest that several factors need to be considered in order to facilitate communication. These are: purposes of formal communication, effects of school structure on communication and effects of the external environment on communication.

Within the external environment factor, the effects of uncertainty deserve a closer look when an educational institution follows a SBM approach. In centralized schools, Hoy and Miskel (1987) assert that the information-obtaining capacity is more or less distributed evenly among all of the positions. Relevant research supports the idea that when problems and tasks become more complex, decentralized hierarchies appear to be more efficient (Hoy and Miskel, 1987).

Therefore, when uncertainty and complexity increase, Hoy and Miskel (1987) argue that two factors need hightened information processing. 1) In situations of high uncertainty, approaches must be in place to acquire some degree of predictability which in turn will require additional information processing. 2) In high complexity situations, high levels of information are received and must be processed. Furthermore, it is suggested that schools must accurately

monitor critical factors in their external environment. The environment, then, becomes a relevant consideration for administrators of SBM schools in a minority-majority context.

Perhaps one of the most critical characteristics of external environments is uncertainty, which along with clustering and scarcity has implications for schools following a site based management approach. Uncertainty is generally understood as the lack of clarity of information associated with expectations of performance within an organization as well as the environment. It involves informational aspects of the environment and it can be described in varying degrees. According to Hoy and Miskel (1987), levels of uncertainty may be different depending on the kind and amount of information that those involved in the decision making process have relative to the trends and changes in environmental conditions. It can also refer to information about specific performance expectations. The degree of uncertainty perceived by individuals as a result of forces emerging from their environment, makes them perform and interact in particular ways.

Early efforts examining environmental uncertainty, suggest that uncertainty is caused by "the lack of information clarity , the long time span or ambiguity of feedback regarding the effect of a decision, and the inability to predict what effect failure caused by an inappropriate decision could have on the organization." (Lawrence and Lorsch, 1967). An additional dimension associated with uncertainty was defined by Emery and Trist (1965). They indicate that the concept of threats or opportunities present in the environment can also have influence on organizational structure.

Similarly, uncertainty may have several other causes. A lack of information regarding environmental factors associated with decision making, lack of knowledge about the consequences, and an inability to assign probabilities as to the effect of a given factor on the success or failure of a decision unit were identified by Duncan (1972).

Uncertainty has also been classified in two categories, as a trait of the environment itself and as a trait or attribute of the organizational members within that environment. Research focusing on the perceived environmental uncertainty (instead of environmental uncertainty) reveals a distinction between the actual, observed environment and the perceptions that organizational members have of that environment. Downey and Slocum (1975) report that differences in perceived environmental uncertainty are caused by an individual's perceptual characteristics, differences in cognitive processes, behavioral response repertories and social expectations for the perception of uncertainty.

Effects of the environment on organizational members, in terms of the degree of uncertainty they perceive, and the way in which they cope with uncertainty, can be analyzed from two perspectives- the information processing approach or the resource dependency approach (Hoy and Miskel, 1987). Those who favor the information processing approach consider the environment as a source of information for decision making. Consequently, the task of establishing mechanisms for either reducing the need for information as the amount and complexity of information increase, or for increasing their capacity for handling the increased information effectively becomes a critical one (Galbraith, 1974). On

the other hand, those who support the resource dependency approach consider the environment as a pool of resources needed to maintain and stabilize organizational operations. Organizational members are faced with the task of competing for scarce resources, and consequently, they must strive to put themselves in a position that facilitates resource acquisition (Hoy and Miskel, 1987).

When coping with uncertainty, organizational members tend to absorb and reduce it (Galbraith, 1974). In order to do so, individuals may utilize intra or interorganizational strategies. Intraorganizational strategies may include buffering, planning and forecasting, and spanning organizational boundaries; whereas, interorganizational strategies include the establishment of beneficial linkages with other entities, and the shaping of environmental elements themselves to meet the organizational members' needs (Hoy and Miskel, 1987). Consequently, " as the amount of uncertainty increases, and therefore information processing increases, the organization must adopt the integrating mechanisms which increase its information processing capabilities -direct contacts, liaisons, task forces, teams, integrating roles, managerial linking roles" (Galbraith, 1974, p. 29).

The varying degrees of uncertainty are directly related to general and specific dimensions of school environment. According to Hoy and Miskel (1987), the general environment of schools includes technological advances, new information, ecological issues, new laws or regulations, changing demographics and political issues; whereas, the specific environment includes the constituents and stakeholders who concern themselves with the short and long term operation of a particular school and with the overall effectiveness of the staff.

Schools in general reduce the effects of environmental uncertainty by using intra or interorganizational processes, in addition to the adjustments of their internal operations. Hence schools in general and site based management school structures, in particular, will not only be affected by the specific attributes of their environment, but more importantly, they will be the most effective structures if adjusted to fit the dimensions of their environment.

Uncertainty has been the focus of several research projects in terms of the stability and complexity of factors, the ability to predict consequences and the timeliness of feedback after decision making (Singh, 1991). However, few studies have attempted to determine specific levels of uncertainty in schools. Consequently, information associated with levels of uncertainty and their effects on organizational members, and the response of public school staff members to the uncertainty perceived within their work environment is needed. (Singh, 1991).

More specifically, site-based management schools, as an organizational type, have not been studied in depth. Efforts to identify the levels and sources of uncertainty most often possessed by staff members in those schools within a minority-majority context are needed. Researchers have implied that organizational effectiveness and even survival may depend on the selection of an appropriate structure. (Singh, 1991). Consequently, questions related to perceptions of uncertainty, sources of uncertainty and levels of uncertainty of site based management schools in a minority-majority situation need to be addressed so that administrative strategies can

be aligned to higher levels of effectiveness, quality teaching and student academic success.

Statement of the Hypothesis

It is argued that site based management strategies enable organizational members to participate in decision making. As a result school organizations increase their capacity to process increased amount of information in situations of high uncertainty. Those operational processes in turn reduce the degree of uncertainty and thus significant and needed information becomes clear to organizational members. Therefore, it was hypothesized that site-based management elementary schools which are using participatory management as the general administrative strategy, exhibit lower degrees of uncertainty than non site-based management elementary schools in a minority-majority context.

Methodology

The focus of this endeavor was to determine the sources of uncertainty that are perceived specifically by a SBM elementary urban school and a non-SBM elementary school. Levels of uncertainty were examined, as well as specific sources, in order to determine which matters were related to uncertainty and to explore whether or not the selected schools were different regarding their perceived environmental uncertainty levels.

Subjects

Two elementary schools were the focus of this study. The sample was comprised by 32 elementary school teachers of a SBM urban school and 30 elementary school teachers of a non-SBM school. The non-SBM school sample was drawn from a study of

environmental uncertainty, staff communication networks and student achievement in public elementary schools conducted by Singh (1991).

The SBM school is located in an inner city area and has a full staff of 32. Over 99% of the student population is Hispanic. Chapter 1 remedial services are provided to over 45% of the students in one or more of the following: Mathematics, English as a second language (ESL), and reading. According to the results of the Texas Educational Assessment of Minimum Skills (TEAMS) test administered in 1989-90, 59.7% of students mastered all subjects. The students attendance rate is 96.23% and its total enrollment is 586 .

The non SBM elementary school has a population of approximately 400 and a full time staff of 30. Minority enrollment is high at 85% and free and reduced lunch eligibility is even higher at 90%. In addition, the results of the Texas Educational Assessment of Minimum skills (TEAMS) administered in 1989-90 indicate that 57.6% of students mastered all subject areas. The matching characteristics of these two schools were related to enrollment, staff, minority population, socioeconomic status and 1989-90 TEAMS achievement scores. These characteristics are presented in table 1.

Table 1

School Characteristics

School	*Enr.	Staff	Min.	SES	Ach	Dach
S.B.M.	586	32	99%	98%	59.7%	44%
Non-SBM	400	30	85%	90%	57%	62.2%

* Enr: Enrollment, Min: Minority, SES: Percentage of students in free or reduced lunch; Ach: Percentage of students passing TEAMS in 1989-90 and Dach: Percentage of district students passing TEAMS in 1989-90.

A basic causal-comparative design was employed which requires two groups differing on some independent variable and comparing them on some dependent variable (Gay, 1987). The two schools were different in that one possessed the site-based management characteristic and the comparison school did not. The dependent variable was the perceived environmental uncertainty. Thus, the unit of analysis was the school. Figure 1 illustrates the design used.

School	Independent Variable	Dependent Variable
A	Site-based management	Perceived Environmental Uncertainty Level
B		Perceived Environmental Uncertainty Level

Figure 1: Causal comparative design

Instrumentation

The Perceived Environmental Uncertainty Index (P.E.U.I.) designed and pilot tested by Singh (1991) was used. This index

measures the degree of clarity respondents felt regarding 11 in district and 9 out of district work-related statements on a five point scale (1= Almost never clear and 5 = Almost always clear) . This scale was reversed for analytical purposes so that items could be expressed in terms of degree of uncertainty rather than clarity. The in-district items included district expectations for teachers' performance, how to do the job, limitations of the job, evaluation process, co-workers status, acquisition of district resources, types of district support available, district expectations for the campus, use of district special services, training/professional growth, and confidentiality of topics and documents. The out of district items included parent expectations for campus, parents responsibilities to campus, dealing with the public, laws regarding performance of the job, expectations and roles of TEA (Texas Education Agency), impact of state legislature on the job, federal government actions and expectations, community expectations for campus and community responsibilities to campus. Additionally, the significance attributed to each item was rated by respondents on a three point scale.

Reliability of the instrument, tested using Cronbach's Alpha was high with a .9270 for the total perceived environmental uncertainty scale, .8961 for the in- district scale and .8729 for the out-district scale.

Procedure

The instrument was administered to all staff of the Site-based Management school with the cooperation of the school administrator in order to assure a high degree of return rate. The non site-based

management school data were drawn from the Singh study as previously indicated.

Analysis of data was completed at two levels - within schools and between the two schools. Both descriptive and inferential measures were used in order to describe each school characteristics and to examine the relationships between the schools perceived environmental uncertainty. Thus, means, standard deviations and analysis of variance were calculated using the Statistical Package for the Social Sciences - SPSS for the Macintosh. In addition, analysis of variance were calculated to determine the degree of relationship between in-district perceived environmental uncertainty, out-district perceived environmental uncertainty and total perceived environmental uncertainty of both schools.

Results

In an attempt to explore relationships between the perceived environmental uncertainty scores of the site-based management school and the non site-based management school, descriptive statistics were used to determine two profiles: the in-district perceived environmental uncertainty and the out-of-district perceived environmental uncertainty. The in-district includes sources of uncertainty from within the district but outside the immediate school building. The out-of-district includes sources of uncertainty from outside of the district and outside of the building. Sample averages were calculated to determine the inside, outside and total uncertainty perceived by both schools. Results are based on a scale ranging from 0 to 1, with one being the greatest degree of uncertainty that could be perceived.

The perceived in-district uncertainty mean for the site-based management school was .332, while the out-of-district and total uncertainty measures were .393 and .359 respectively. On the other hand, the results of the comparison school were .337 for the perceived in-district uncertainty, .488 for the out-of-district and .428 for the total environmental uncertainty. Apparently the site-based management school reflects a lower degree of uncertainty than the non site based management school.

In addition, specific items were examined in order to identify items rated highest in terms of uncertainty for both schools. As it is illustrated in table 2, the top three in-district items that were least clear and most significant for the SBM school are item 7 which refers to types of district support services available to teachers in personal and work related matters; item 10 which refers to training or professional growth and item 6 which refers to matters related to acquisition of resources. On the other hand the top three in-district items rated as least clear and significant by the non-SBM school were item 8 which refers to district expectations for the campus, item 7 related to types of district support available and item 9 which refers to use of district special services.

Table 2

In-District Uncertainty Sources

Item	SBM School		Non-SBM School	
	Mean	Rank	Mean	Rank
1. District expectations for me	4.53	7	6.15	4
2. How to do my job	4.31	10	4.82	10
3. Limitations of my job	5.50	4	5.93	5
4. Evaluation process	3.47	11	3.96	11
5. Co-workers status, progress	5.44	5	5.63	7
6. Acquisition of district resources	5.59	3	5.68	6
7. Types of dist. support available	5.94	1	6.29	2
8. Dist. expect. for the campus	4.47	9	6.71	1
9. Use of district special services	5.44	6	6.29	3
10. Training/professional growth	5.66	2	5.36	8
11. Confidentiality of topics, doc.	4.50	8	5.25	9

The top three out-of-district items rated as most unclear and highly significant for the SBM school were item 6 which refers to legislation impact on teachers' job; item 1 which refers to expectations of parents and item 8 which refers to expectations of other community members. On the other hand, the top three out-district items for the non-SBM school included item 6 which refers to impact of state legislature on the job, item 5 which refers to

expectations and role of the TEA, and item 7 which refers to federal government actions and expectations. Table 3 contains this comparison.

Table 3

Out-of-District Uncertainty Sources

	SBM School		Non-SBM School	
Item	Mean	Rank	Mean	Rank
1. Parent expectations for campus	6.56	2	6.46	9
2. Parent responsibilities to campus	5.09	8	6.86	6
3. Dealing with the public	4.44	9	6.15	8
4. Laws regarding performance of job	5.28	7	7.32	4
5. Expectations, role of TEA	6.25	5	7.89	2
6. Impact of state legislature on job	6.78	1	8.08	1
7. Federal government expectations	6.34	4	7.61	3
8. Community expectations for campus	6.50	3	7.07	5
9. Community responsibilities to campus	5.88	6	6.71	7

In order to determine the differences between the in-district environmental uncertainty of the SBM school and non-SBM school, analysis of variance was used. The F value 3.972 was found to be significant at the .0601 alpha level. The F value for the out-district environmental uncertainty was 12.765 which was significant at .01 alpha level. The F value for the total perceived environmental

uncertainty was 4.385 which was significant at .05 alpha level as shown in table 4. These results suggest that there is a significant difference between the two schools regarding the degree of perceived environmental uncertainty.

Table 4
Comparison of Perceived Environmental Uncertainty Between the SBM School and the Non-SBM School

Perceived Environmental Uncertainty	SBM School Mean	Non-SBM School Mean	F Value
In-District PEU	4.986	5.643	3.972*
Out-District PEU	5.902	7.120	12.765**
Total PEU	5.399	6.161	4.385***

* Significant at .10 alpha level.
** Significant at .01 alpha level.
*** Significant at .05 alpha level.

Discussion

The results of this study support the research hypothesis; the site-based management elementary school did exhibit lower degrees of uncertainty than the non site-based management school. In-district and out-of-district levels of perceived environmental uncertainty were consistently lower for the SBM school.

Inside of district items that were rated as most uncertain were different for both schools. For the SBM school items were 7, 10 and 6. Respondents felt unclear and in need of information regarding the availability of district support services, information about training and professional growth and, the acquisition of district resources. Whereas respondents of the non-SBM school identified items 8, 7

and 3 as the most unclear. They were most concerned with lack of information associated with district expectations for the campus, availability of district support services and use of district special services.

On the outside of district items, the two schools were concerned with item 6 which refers to the impact of the state legislature on the job. In addition, the SBM school respondents were concerned with parent expectations for campus and community expectations for campus, items 1 and 8 respectively. Similarly, the non-SBM school respondents were also concerned with expectations and role of the State Education Agency and the impact of the federal government actions and expectations (items 5 and 7).

The findings of this study are consistent with those of Downey and Slocum (1975), Ogawa (1984), Hoy and Miskel (1987) and Singh (1991), concerning differences in perceived environmental uncertainty of organizational members. The evidence resulting from this study suggests that site based management is a viable strategy for reducing and coping with environmental uncertainty. Since this study was conducted with elementary schools, further research is needed involving other school levels following site-based management approaches in order to address specific concerns associated with environmental uncertainty. Furthermore, correlations between site-based management schools' perceived levels of environmental uncertainty and student achievement need to be addressed in future studies.

References

AASA/NAESP/NASSP School Based Management Task Force (1988). School based management Virginia.

Benvenites, G. (1987). Professionalizing the organization San Francisco, CA:Jossey-Bass.

Conley, S.C. and Bacharach, S.B. (1990, March). From school-site management to participatory school-site management. PKP, (pp.539-544).

Duncan, R.B. (1972) Characteristics of organizational environments and perceived environmental uncertainty. Administrative Science Quarterly, 17, 313-327.

Emery, F. and Trist, E. (1965) The causal texture of organizational environments. Human Relations, 18, 21.-32.

Galbraith, J. R. (1974, May). Organization design: An information processing view. Interfaces, 4 (3), 28-36.

García , J. E. (1991, September). Minorities in Texas schools are the majority. Austin American-Stateman.

Gay, L.R. (1987). Educational research: Competencies for analysis and application. (Third Edition). Columbus, OH: Merril Publishing Company.

Greenblatt, R.B., Cooper, B., & Muth, R. (1984, February). Managing for Effective Teaching. Educational Leadership, 57-59

Hall, R.H. (1967). Occupations and the social structure Englewood Cliff, NJ: Prentice Hall.

Hoy W.K. and Miskel, C.G. (1987) Educational administration: Theory research and practice. (3rd. Ed.). New York: Random House.

Keith, S. and Girling, R.H. (1991). Education, management and participation. Boston: Allyn and Bacon

Lawrence, P.R. and Lorsh, J.W. (1967). Organization and environment: Managing differentiation and integration. Boston: Harvard University, Division of Research, Graduate School of Business Administration.

March, J.G. and Simon, H.A. (1958). Organizations. New York: Wiley.

Mitgang, L. (1991, September). Minority students to make up third of U.S. school enrollment by 1995. Austin American-Stateman.

Ogawa, R. (1984, spring) Teachers and administrators: Elements of the information processing repertoires of schools. Educational Administration Quarterly, 20 (2) 5-24.

O'Reilly, Ch. A. and Pundy, L.R. (1979). Organizational Communication, in Steven Kerr (Ed.), Organizational Behavior. Columbus, OH: Grid.

Perrow, Ch. (1961). A framework for the comparative analysis of organizations. American Sociological Review, 32, (pp. 194-208).

Singh, K. (1991) Environmental uncertainty , staff communication networks, and student achievement in public elementary schools. Ph.D. Dissertation, The University of Texas at Austin.

Thompson, J.D. (1967). Organizations in action. New York: McGraw-Hill.